Evaluation of a Primary Care Weight Loss Program

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Nurse practitioners at a primary care clinic established a weight loss program to address high obesity rates among their African American patients. Interviews and a retrospective chart review were used to evaluate the weight loss program. Number of appointments was the only significant predictor of weight loss, and there was a strong positive correlation between total number of appointments and weight loss. The overall view of the program was positive. This description and evaluation of the program may be useful to nurse practitioners seeking to develop an individualized effective weight loss intervention for African Americans within a primary care setting.

Keywords: African American; obesity; weight loss; primary care

Introduction

Currently, one-third of the adults, roughly 78.6 million people, in the United States are affected by obesity (Centers for Disease Control and Prevention [CDC], 2014). Non-Hispanic African Americans have the highest rate of obesity nationally (CDC, 2014). Obesity is linked to heart disease, diabetes mellitus, arthritis, liver disease, hypertension, hyperlipidemia, and stroke (CDC, 2012; LeBlanc, O'Connor, Whitlock, Patnode, & Kapka, 2011). The U.S. Preventative Services Task Force recommends that primary care providers screen adults for obesity and offer behavioral weight loss interventions as treatment (Moyer, 2012). This Level B recommendation implies high certainty that behavioral interventions will have moderate to substantial benefits. Currently, less than 10% of primary care providers are following this recommendation (Dennison Himmelfarb, 2012). Primary care providers can play a major role in management of obesity, but it is unclear how to incorporate such interventions into primary care practices (National Heart, Lung, and Blood Institute [NHLBI], 2000; Tussing-Humphreys, Fitzgibbon, Kong, & Odoms-Young, 2013).

In 2014, two nurse practitioners (NPs) at a primary care clinic in an urban Midwestern city recognized that 15-min appointments were insufficient to address both patients' acute complaints and their weight management concerns effectively in the same visit. An estimated 30%–40% of this clinic's patients were obese, which surpassed the city's obesity rate of 27% (Wisconsin Department of Health Services, Division of Public Health, Nutrition, Physical Activity, and Obesity Program and Wisconsin Partnership for Activity and Nutrition, 2008). The result of the needs assessment was the impetus for the NPs to establish a weight loss program at this primary care clinic. The evaluation of the weight loss program was the primary investigator's doctorate of nursing practice (DNP) capstone quality improvement project. The purpose of this article is to describe the program and the results of the evaluation as an example for NPs that are seeking to implement weight loss interventions in their own practices.

http://dx.doi.org/10.1891/2380-9418.10.1.79

Method

Design

This program evaluation used quantitative data extracted from the electronic medical record (EMR) and qualitative data gathered from telephone interviews. Data from the EMR were retrospective. A local university institutional review board (IRB) reviewed this quality improvement evaluation project and deemed it as "exempt."

Program Description

The weight loss program was developed using the NHLBI (2000) obesity treatment guidelines. The program included a series of 10 "weight loss only" one-on-one appointments delivered by both NPs over 6 months. Participants were allowed to come in for as need appointments when they felt they needed more support outside of the standard 10 sessions. Participants self referred or were referred by a clinic provider. All of the participants had state Medicaid insurance, which covered the cost of the weight loss appointments.

In the first month, participants were seen for 30–60 min once per week for individual counseling and weight loss education. Topics included defining obesity, reading nutrition and food labels, physical activity recommendations and food exchange options. Participants were encouraged to set weekly goals for weight loss, physical activity, and dietary modifications; weigh themselves weekly; and monitor caloric intake with food diaries. In the second month, appointments were every other week followed by monthly appointments for the last 4 months. In visits during months 2 through 6, participants were weighed, goals reviewed and revised, and barriers to weight loss were addressed. Forty-six percent of patients were started on weight loss medication within the 6-month weight loss program period. None of the patients were on weight loss medication before starting the program.

The theoretical framework used to develop and guide the program was social cognitive theory. SCT describes the process of behavior change and how it is influenced by personal, behavioral, and environmental factors (Bandura, 1991; Mastin, Campo, & Askelson, 2012). The core concepts of SCT used in the program included outcome expectations, perceived self-efficacy, goal setting, and self-regulation (Bandura, 1991). Using SCT facilitated an individualized approach. At each visit, participants discussed their weight loss expectations and perceived self-efficacy. They set goals and learned how to self-regulate their behaviors.

Data Collection

Data were collected via chart review and telephone interviews. Data extracted from charts were demographics including age, race, gender, weights and BMI, number of visits attended, weight loss medication use, and comorbidities. Data were collected retrospectively on 26 patients who had attended at least two weight loss appointments in the previous year. One NP reviewed, collected, and analyzed the data.

The same NP called all of the patients to invite participation in a telephone interview. The interviews took place after participation in the program. Ten of the 26 patients (38.5%) were reached by phone; all agreed to be interviewed. An interview guide was used to ascertain patients' reasons for participation, favorite aspects of the program, barriers to participation, changes in health, and suggestions for improvement. Questions were read aloud, and responses were captured by the interviewer through field notes. Participants received a $10 Walmart gift card after the interview.

Data Analysis

Descriptive statistics including mean and range were used to describe age, number of appointments attended, baseline weight, height and BMI, and number of comorbidities. Race, gender, weight loss medication use, and the number of comorbidities experienced by each participant were given in percentages. Pearson's r was used to describe the correlation between number of appointments and weight loss from baseline to last appointment. Multiple regression analysis was used to describe predictive relationships between number of appointments, weight loss medication use, and comorbidities with weight loss. Statistical significance was set at $p < .05$. Interview data were analyzed by examination of the notes, summarization, and synthesis of the findings.

Results

Description of Participants

Participants were over 18 years of age, African American, and diagnosed with obesity. Comorbidities included fatty liver disease, sleep apnea, congestive heart failure, coronary artery disease, acid reflux, asthma, arthritis, hypertension, hyperlipidemia, and diabetes (Table 1).

Weight Loss Outcomes

The mean number of visits attended was 6.4 ($SD = 4.6$) and ranged from 2 to 17. Mean weight loss from baseline to last appointment was 15.5 lb ($SD = 21$). Weight changes ranged from a 13-lb increase to loss of 60 lb. There was a strong positive correlation between number of appointments and weight loss, $r\,(26) = .81, p < .001$ (Figure 1). Number of appointments was the only significant predictor of weight loss, explaining 66% of the

TABLE 1. Characteristics of Study Participants ($N = 26$)

Characteristic	*N* (%)	*M* (*SD*)	Range
Gender			
Female	24 (92.3)		
Male	2 (7.7)		
Ethnicity			
African American	26 (100)		
Weight loss medication use	12 (46.1)		
Age in years		44 (11.6)	24–65
Number of appointments attended		6.4 (4.6)	2–17
Baseline weight (lb)		273.7 (57.1)	167–387
Baseline height (in.)		66.4 (2.7)	62–74
Baseline BMI		43.7 (8.31)	30.7–67.5
Pounds gained or lost (baseline to last appointment)		15.5 (21)	−60 to +13
Comorbidities per patient		3.0 (1.8)	0–6

Note. BMI = body mass index.

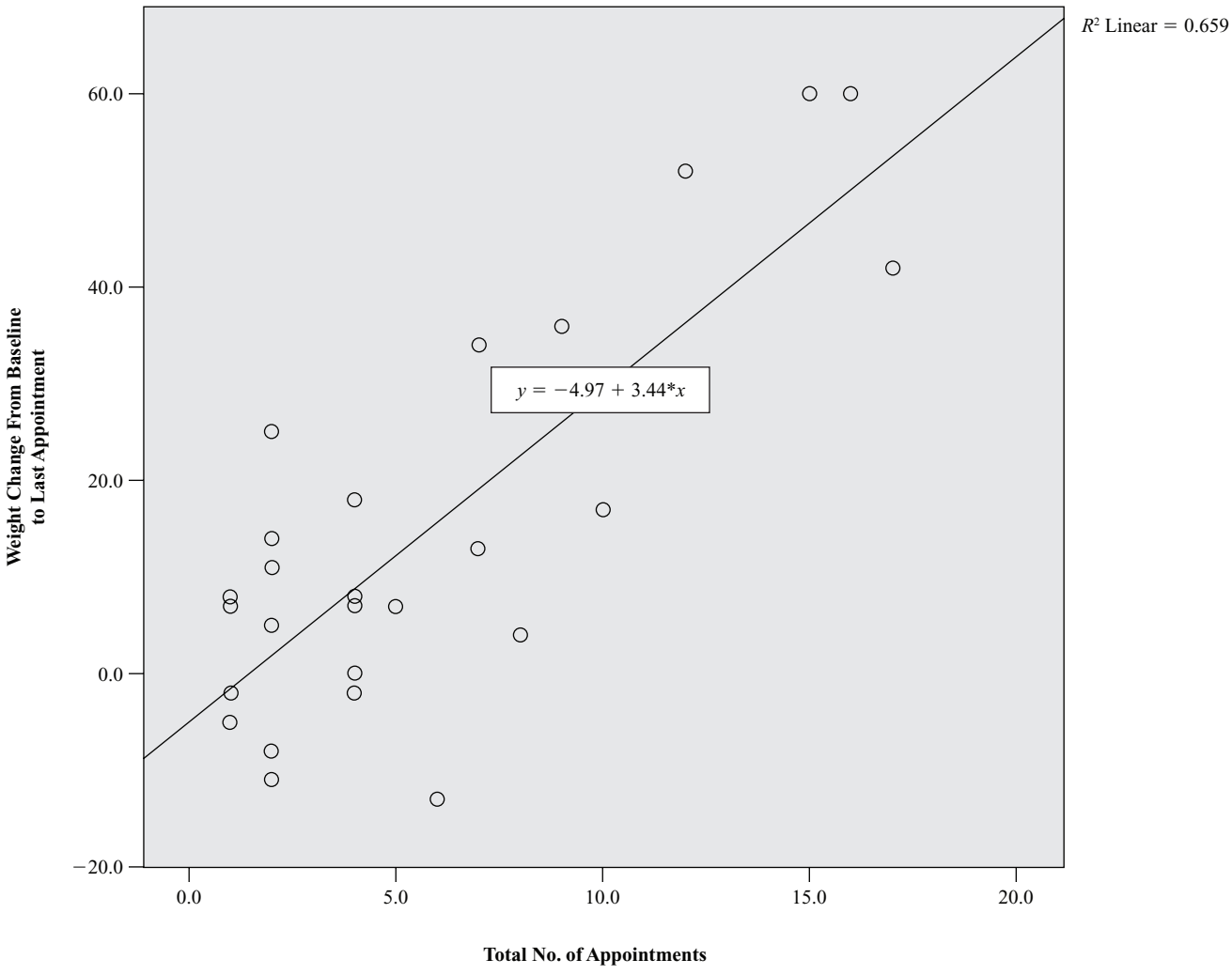

Figure 1. Correlation chart.

variance, $b = 3.44$, $p < .001$. Number of comorbidities ($b = -0.04$, $p = .74$) and use of weight loss medication ($b = 0.02$, $p = .85$) were not predictive of weight loss.

Patients' Perspectives

Nine of 10 participants interviewed were women. All had completed the program prior to interview. Total number of appointments for this group ranged from 7 to 17. Mean weight loss was 35.5 lb and ranged from 11 to 60 lb.

Reasons for Participation. The most common reason for participation was motivation to lose weight because of health concerns such as worsening blood pressure (BP), diabetes, and pain. One participant stated, "My diabetes was getting worse and I knew I had to lose weight for it to get better." Another reason was lack of knowledge regarding weight loss. Seven participants felt they had tried everything but continued to be unsuccessful. For example, one of them stated, "The weight loss program gave me the knowledge to conquer my weight issues." Two started the program because of providers' recommendations.

Favorite Aspects of Program. Interviewed participants expressed appreciation for diet education. Education about calorie counting, food labels, calorie counting applications, and food diaries helped them to lose weight. Setting goals kept them accountable for their weight loss and follow-up appointments kept them motivated to reach their goals. The relationship established between the providers and the participants promoted weight loss. One participant said, "She [the NP] was always there for me, even when I failed. I never felt judged by her, and it was nice to celebrate with someone when I succeeded." They described the providers as understanding, supportive, and caring.

Barriers. The most common barrier was embarrassment to be weighed when participants had not lost weight that week or had gained. One participant said, "There was 1 week where I really fell off the wagon and didn't want to show my face in the clinic." Two participants reported lack of transportation to appointments. For another, his work schedule conflicted with clinic hours. Financial barriers were not expressed by the interviewed participants.

Health Changes. Noticeable health improvements occurred. One participant who lost more than 50 lb stated, "This program changed my life, and I feel more alive." The BPs of multiple participants improved. Some had discontinued medications for diabetes or hypertension. Others' improvements were increased energy and endurance, improved cholesterol profiles, more motivation to quit smoking, and decreased pain. Three stated that their clothes fit better and they felt "more comfortable in their own skin."

Suggestions for Improvement. No participants had negative comments. Six suggested a support group to talk with people "going through the same thing." A support group would facilitate shared stories, struggles, and tips. One participant said a "buddy system" would help because "you wouldn't be working alone." The participants, who indicated that transportation was a barrier, suggested a phone call in place of an in-person meeting.

Discussion

This evaluation revealed that attendance contributed to weight loss. Previous research supports that more frequent attendance at weight loss appointments is associated with greater weight loss and increased activity levels (Tussing-Humphreys et al., 2013; Walcott-McQuigg et al., 2002). Participants in this program attributed their participation to their motivation to lose weight and concerns about their health. Participants felt more comfortable because their clothes fit better. Other researchers have also found that African Americans described the fit of their clothing, health problems, and functionality as primary reasons for weight loss attempts (Barnes, Goodrick, et al., 2007; Barnes & Kimbro, 2012; Befort, Thomas, Daley, Rhode, & Ahluwalia, 2008; Young, Gittelsohn, Charleston, Felix-Aaron, & Appel, 2001). To promote successful weight loss, it is important to recruit motivated participants into programs (Bronner & Boyington, 2002). As predicted with SCT, persons with high outcome expectations for weight loss have increased motivation for sustained participation in weight loss programs (Bandura, 1991; Mastin et al., 2012).

The interviewed participants felt that diet education, goal setting, and provider–patient relationships contributed most to their weight loss. Comparable results have been reported by other researchers. African American women recognized eating behaviors as the primary cause for weight gain and expressed a need for ongoing support and follow-up (Befort et al., 2008). In another study, African American women wanted providers to be empathetic and supportive, have personal weight loss experience, and to establish close relationship with them (Thomas et al., 2009).

Suggestions for improvement included support groups, buddy system, and phone calls instead of in person visits when transportation constraints existed. Collectivism, which emphasizes the importance of group involvement, is a common belief in the African

American community and can affect weight loss behaviors. In previous research, African American patients preferred social support versus losing weight individually. They favored group meetings with other women and believed that a buddy system would improve their participation in the intervention (Blixen, Singh, & Thacker, 2006; Blixen, Singh, Xu, Thacker, & Mascha, 2006; Bronner & Boyington, 2002; Setse et al., 2008; Thomas et al., 2009; Young et al., 2001).

Limitations

Limitations to this evaluation must be acknowledged. The sample was small and homogenous. All participants were African American and predominately female. The multiple regression analysis examined three independent variables: number of appointments, weight loss medication use, and total comorbidities. Other variables such as participants' age and baseline BMI were not assessed but may have influenced amount of weight lost. Persons who attended only one appointment were not included in this evaluation, thus potentially important barriers to participation were not identified.

The NP who implemented the weight loss program conducted the interviews. This may have introduced bias if participants answered the questions in ways they thought the examiner expected. However, the preexisting personal relationship with participants was also a strength that may have encouraged participation.

Conclusion

Findings from this evaluation and the literature support comprehensive weight loss programs that include behavioral management, diet education, and goal setting. It is important to target participants who are motivated to lose weight, emphasize attendance, provide support groups, and encourage follow-up. Barriers to weight loss commonly seen in the African American community should be understood and regularly examined to determine the impact on participants. The weight loss program described in this article is reproducible, inexpensive, and can readily be implemented by NPs in primary care settings. In particular, the results provide specific information that can be used to tailor effective weight loss interventions for African Americans within the primary care setting.

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